



## DEPARTMENT OF ENERGY

### Federal Energy Regulatory Commission

Docket. No. AD14-14-000

Price Formation in Energy and Ancillary Services  
Markets Operated by Regional Transmission  
Organizations and Independent System Operators

#### Supplemental Notice of Workshop on Operator Actions in RTO and ISO Markets

As announced in a Notice issued on October 10, 2014, the Federal Energy Regulatory Commission (Commission) will hold a workshop on Tuesday, December 9, 2014 to commence a discussion with industry on operator actions in energy and ancillary service markets operated by the Regional Transmission Organizations and Independent System Operators. The workshop will commence at 8:45 am and conclude at 4:30 pm and will be held at the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426. This workshop is free of charge and open to the public. Commission members may participate in the workshop.

The agenda and a list of participants for this workshop are attached. Those who plan to attend the workshop are encouraged to complete the registration form located at <https://www.ferc.gov/whats-new/registration/12-09-14-form.asp>. There is no registration deadline.

The workshop will be transcribed. Transcripts of the workshop will be available for a fee from Ace-Federal Reporters, Inc. (202-347-3700 or 1-800-336-6646).

Additionally, there will be a free webcast of the workshop. The webcast will allow persons to listen to the workshop but not participate. Anyone with Internet access who wants to listen to the workshop can do so by navigating to the Calendar of Events at [www.ferc.gov](http://www.ferc.gov), locating the technical workshop in the Calendar, and clicking on the webcast link. The Capitol Connection provides technical support for the webcast and offers the option of listening to the meeting via phone-bridge for a fee. If you have any questions, visit [www.CapitolConnection.org](http://www.CapitolConnection.org) or call 703-993-3100.

While this workshop is not for the purpose of discussing specific cases, the workshop may address matters at issue in the following Commission proceedings that are pending: Cal. Indep. Sys. Operator Corp., Docket Nos. ER15-50 and ER15-402; Calpine Energy Serv., L.P., Docket No. ER15-376; Duke Energy Corp. v. PJM Interconnection, L.L.C., Docket No. EL14-45; FirstEnergy Solutions Corp. v. PJM Interconnection, L.L.C., Docket No. EL13-47; Indicated Load-Serving Entities v. Midcontinent Indep. Transmission Sys. Operator, Inc., Docket No. EL13-75; ISO New England, Inc., Docket No. ER15-257; Midcontinent Indep. Sys. Operator, Inc., Docket Nos. ER14-1736 and ER14-2445; Midcontinent Indep. Sys. Operator, Inc. v. Sw. Power Pool, Inc., Docket No. EL14-30; Midwest Indep. Transmission Sys. Operator, Inc., Docket No. EL11-34; N. Ind. Pub. Serv. Co. v. Midcontinent Indep. Sys. Operator, Inc., Docket No. EL13-88; Old Dominion Elec. Coop., Docket No. ER14-2242; PJM Interconnection, L.L.C., Docket Nos. EL13-95, ER14-1144, ER14-1145, and ER14-2705; Sw. Power Pool, Inc., Docket Nos. ER12-

1179, ER14-1174, ER14-2399, and ER14-2850; and Sw. Power Pool, Inc. v. Midcontinent Indep. Sys. Operator, Inc., Docket No. EL14-21.

Commission workshops are accessible under section 508 of the Rehabilitation Act of 1973. For accessibility accommodations please send an email to [accessibility@ferc.gov](mailto:accessibility@ferc.gov) or call toll free (866) 208-3372 (voice) or (202) 502-8659 (TTY), or send a fax to (202) 208-2106 with the requested accommodations.

For more information about the workshop, please contact:

*Logistical Information*

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Dated: November 20, 2014

Kimberly D. Bose,  
Secretary.



# **Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators**

## **Operator Actions**

**Docket No. AD14-14-000  
December 9, 2014**

## **Agenda**

On December 9, 2014, a third and final workshop in this docket will be held to address matters of price formation in the energy and ancillary services markets administered by the Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs).<sup>1</sup> The workshop will focus on operator actions that affect price formation.

**8:45am - 9:00am**                      **Welcome and Opening Remarks**

**9:00am – 12:00pm**                      **Panel 1: Operator Actions in RTOs and ISOs  
(with a 15 minute break)**

Panel 1 will address the nature of operator-initiated out-of-market resource commitments and operator adjustments to market inputs. Recognizing that the current state-of-the-art computational tools do not allow unit commitment and economic dispatch algorithms to consider all relevant system constraints, panelists will be asked to discuss whether and how to incorporate otherwise un-modeled constraints (e.g., voltage constraints) into the unit commitment and economic dispatch processes. Topics will include: the extent to which un-modeled constraints require operator actions outside of the market; how operators (and market designers) consider which constraints to model; under what circumstances unit commitment decisions should be made as part of the day ahead or

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<sup>1</sup> *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Notice of Workshop, Docket No. AD14-14-000 (Oct. 10, 2014).

real-time market, or as part of the residual unit commitment process; and, when making commitments as part of the market processes, under what circumstances such commitments should be reflected in energy and ancillary services prices. Panelists will also be asked about the types of information that the RTOs and ISOs currently release publicly about operator actions, including the granularity and timing of such information. Panelists will be asked to discuss current or recent RTO and ISO efforts to improve the price formation process as it relates to un-priced or otherwise out-of-market operator actions.

**Panelists:**

- Peter Brandien, ISO New England Inc.
- Mark Rothleder, California Independent System Operator Corporation
- Jeff Bladen, Midcontinent Independent System Operator, Inc.
- Wes Yeomans, New York Independent System Operator, Inc.
- Adam Keech, PJM Interconnection, L.L.C.
- Sam Ellis, Southwest Power Pool, Inc.

**12:00pm – 1:15pm                      Lunch**

**1:15pm – 2:45pm                      Panel 2: Experience with Operator Actions**

Panel 2 will focus on the experience market participants have with out-of-market operator actions. In particular, this panel will explore the extent to which panelists believe such operator actions affect the operation and revenues/costs of market participants that own generation assets and serve load. Panelists will be asked to provide specific examples, based on their experience, of operator actions that they believe have negatively impacted the price formation process. To the extent possible, panelists will be asked to discuss differences among the approaches taken by the RTOs and ISOs to incorporate otherwise un-modeled constraints into the unit commitment and economic dispatch processes. Panelists will also be asked to comment on the information that would be most helpful to them in understanding why resources are committed for reasons other than economics and how those commitments affect prices and make-whole charges. Finally, panelists will be asked for their recommendations to improve the price formation process.

**Panelists:**

- Andrew Hartshorn, NRG/Boston Energy Trading & Marketing
- Michael Schnitzer, NorthBridge Group, speaking on behalf of Entergy Nuclear Power Marketing, LLC
- Michael Evans, Shell Energy North America (US), L.P.
- Edward Tatum, Old Dominion Electric Cooperative
- John A. Anderson, Electricity Consumers Resource Council (ELCON)

- Steve Wofford, Exelon Corporation
- Tom Kaslow, GDF SUEZ Energy North America, Inc.
- Mark Smith, Calpine Corporation
- Joel Gordon, PSEG

**3:00pm – 4:30 pm                      Panel 3: Options to Reduce the Market Impacts of Operator Actions**

Panel 3 will focus on practices that RTOs and ISOs have adopted, plan to adopt, or might consider adopting to incorporate otherwise un-modeled constraints (e.g., voltage constraints) into the unit commitment and economic dispatch processes. These practices include, but are not limited to: pricing run enhancements to expand the types of resources that are eligible to set the clearing price for energy; adjustments to better align the market model with the physical operation of the system; transmission constraint relaxation; ramping products and reserve products that better reflect the costs of supplemental commitments operators might make to address uncertainty. Panelists will be asked to discuss the factors that influence the ability to adopt any of the above practices and to discuss the considerations made when choosing among these practices. Panelists will also be asked to discuss other options to better reflect currently un-priced operator actions in market clearing prices.

**Panelists:**

- David Patton, Potomac Economics
- Matthew White, ISO New England Inc.
- Andrew Hartshorn, NRG/Boston Energy Trading & Marketing
- Michael Schnitzer, NorthBridge Group, speaking on behalf of Entergy Nuclear Power Marketing, LLC
- Steve Wofford, Exelon Corporation
- Edward Tatum, Old Dominion Electric Cooperative
- John A. Anderson, ELCON

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